USER MANUAL

iForks

Original Instructions

Number 6806956-R5 EN

CE cascade™ | RAVAS

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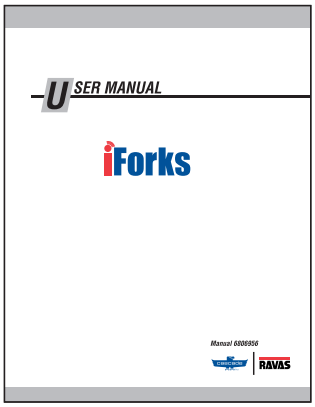
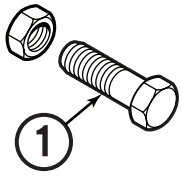
OVERVIEW

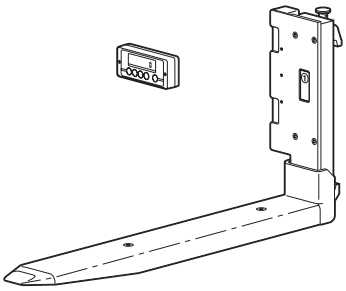
This manual describes the installation and use of the iForks. Read this manual carefully. The installer must be informed of the contents of this manual. Follow the contents of the manual precisely. Always do things in the correct order. This manual should be kept on a safe and dry place. In case of damage or loss the user may request a new copy of the manual from Cascade RAVAS.



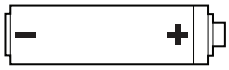
Read through user manual



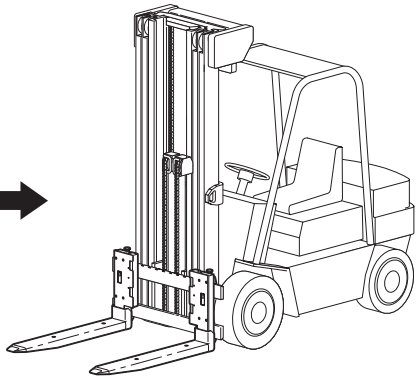
Review parts



Install iForks system on truck

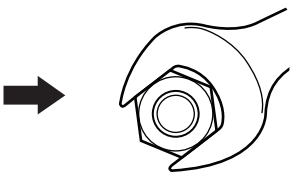


Install batteries



Use system

Recharge or change batteries



Perform 2000 Hour Maintenance

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WARNINGS & SAFETY MEASURES

When using iForks, carefully read the instructions and guidelines contained in this manual. Follow the steps shown to install the iForks system onto the truck. If any of the instructions are not clear, please contact Cascade RAVAS.

IMPORTANT: Field alterations may impair performance or capability and could result in loss of warranty. Consult Cascade RAVAS for any required modifications.

No riders

No reaching through mast

No standing under load

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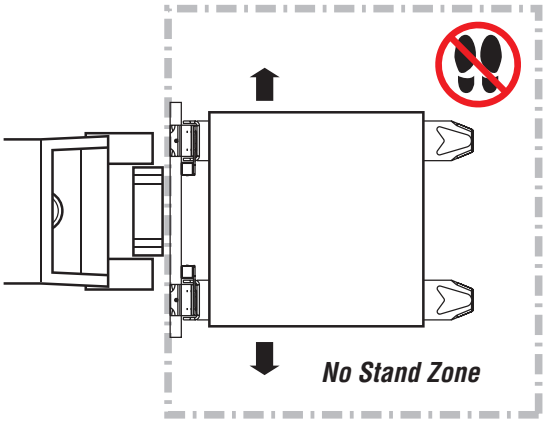


No Stand Zone

WARNING: Cascade Ravas is not responsible for any physical harm done to the operator due to the presence of the display in the truck cabin.

WARNING: Do not operate iForks unless you are a trained and authorized lift truck driver.

IMPORTANT: Cascade RAVAS is not responsible for errors that occur due to incorrect weighing or inaccurate scales. It is the responsibility of the purchaser to train their employees and to properly maintenance iForks.

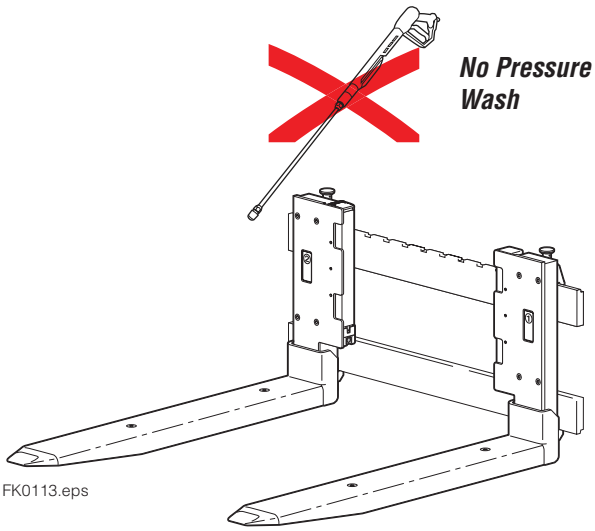
IMPORTANT: All safety regulations that apply to the truck remain valid and unchanged. Always follow the operating, maintenance and repair instructions for the truck.

IMPORTANT: Tampering or removing iForks NTEP Security wire or label will void NTEP Certification.

CAUTION: High humidity and liquid applications can damage iForks. Verify iForks are pretreated with a coating to prevent rust and corrosion.

CAUTION: Environment and application can affect the iForks and how the system weighs. Verify that iForks suit proper conditions.

No Pressure Wash



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Optimal Temperature Range:
10° C minimum
40° C maximum

Weighted Emission Sound Pressure Level - Weighted emission sound pressure level (LpA) does not exceed 70 dB(A).

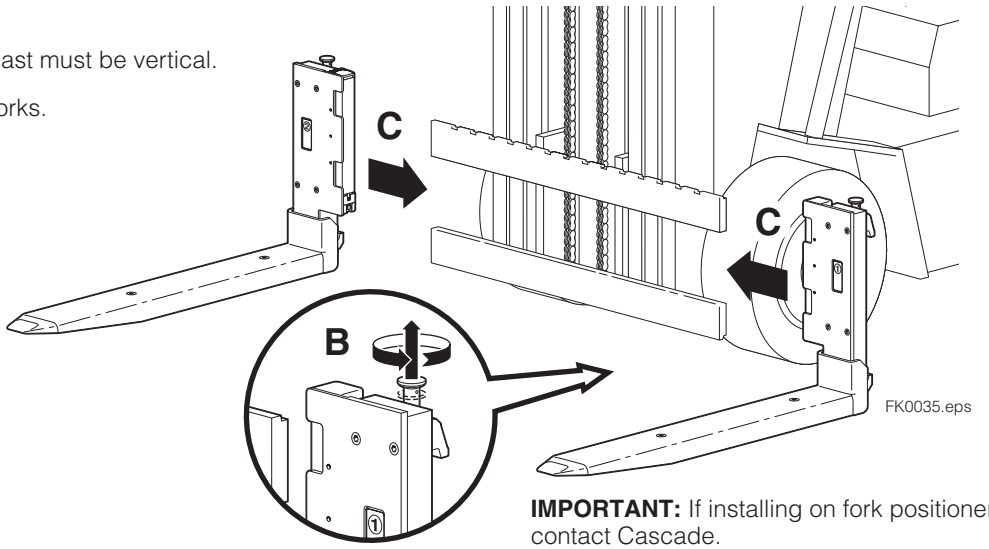
Measured Value of Whole Body Vibration - Measured value of whole body vibration (m/s^2) does not exceed 0,5 m/s^2.

Measured Value of Hand-Arm Vibration - Measured value of hand-arm vibration (m/s^2) does not exceed 2,5 m/s^2.

1 Install iForks

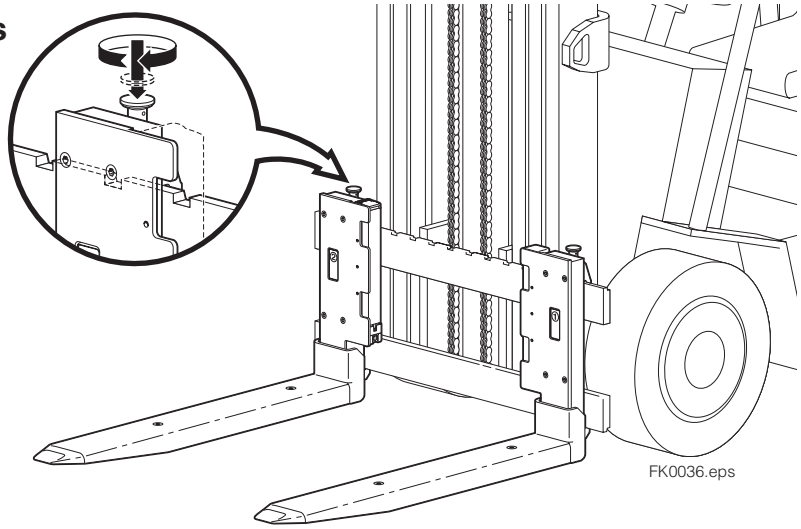
IMPORTANT: Truck mast must be vertical.

A Remove standard forks.
B Unlock iForks.
C Install iForks.



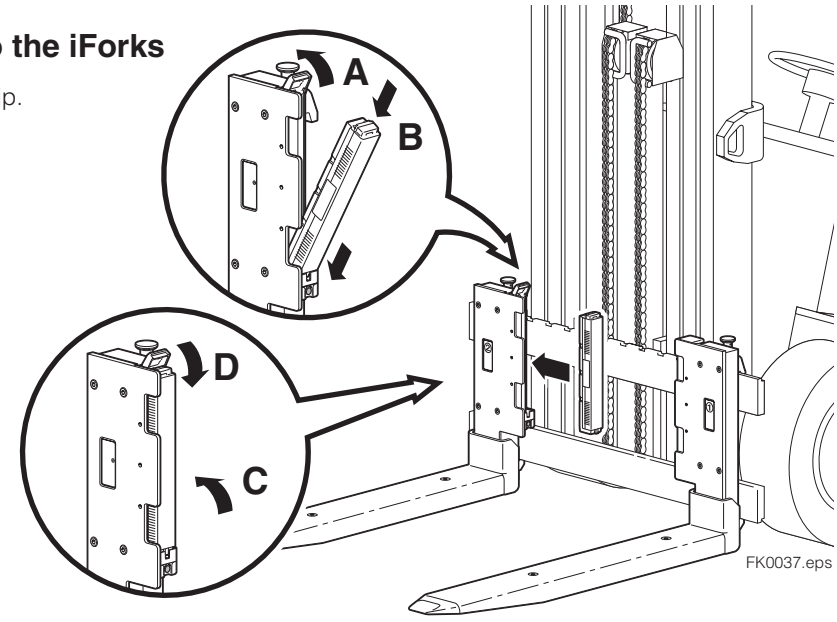
IMPORTANT: If installing on fork positioner, contact Cascade.

2 Lock iForks



3 Install battery packs into the iForks

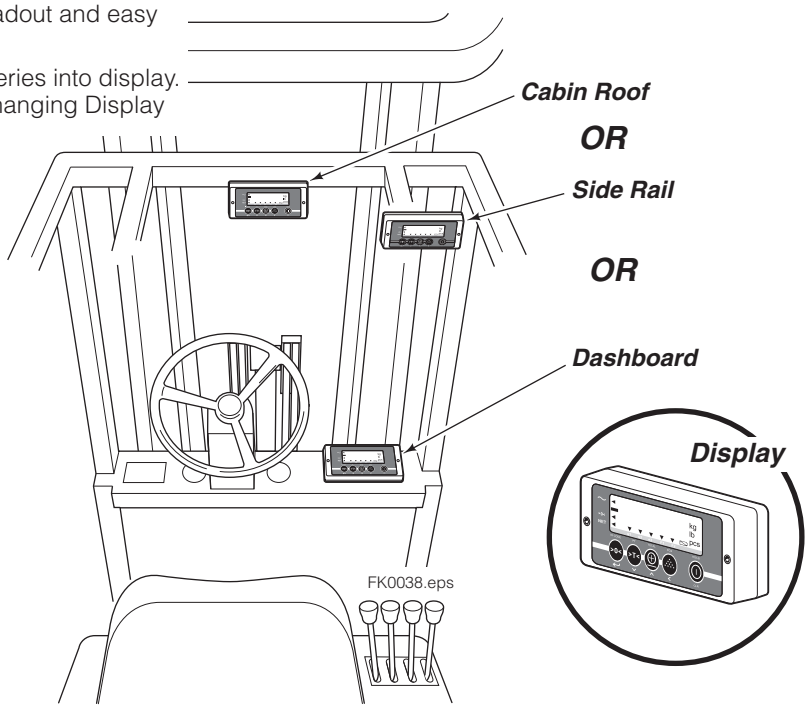
A Lift up battery holder locking clip.
B Position battery pack.
C Click into the battery holders.
D Secure the locking clips down.



6 Locate and mount the display

Find a suitable location for readout and easy access to display.

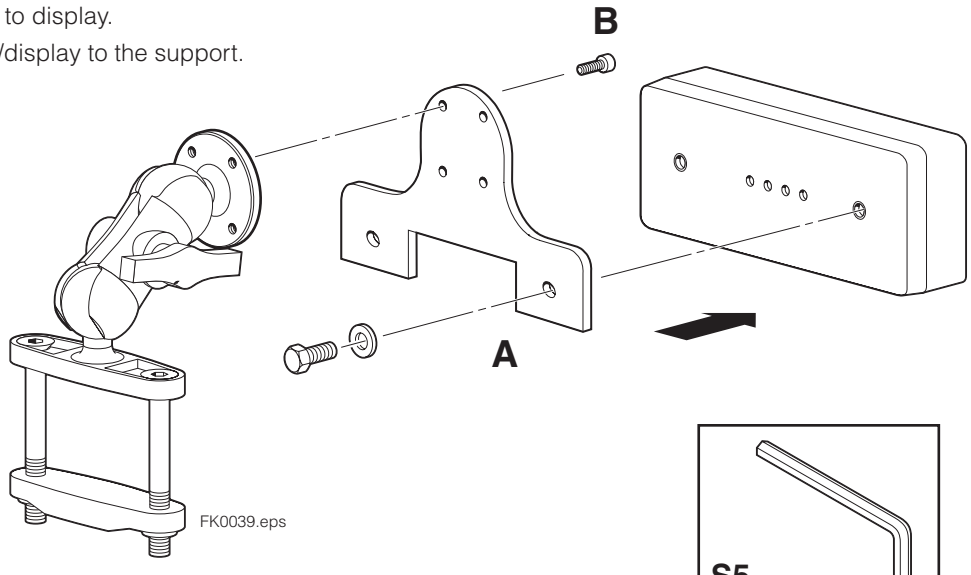
NOTE: If required, install batteries into display. Refer to Batteries Section, "Changing Display Batteries", page 17.

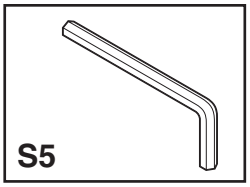


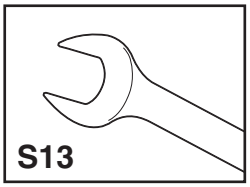
7 Install display bracket and support, if required

A Install bracket to display.

B Install bracket/display to the support.







Left of Display

When ◄ appears:

~ The weighing system (including load) is stable

>0< The weight shown is within the zero range

NET The display is showing the net weight

When ▬ appears, the weight shown is negative

Middle of Display

When ▼ appears:

e1 Weight shown is in .2 kg steps; only for weight that ranges 0-200 kg.

e2 Weight shown is in .5 kg steps; only for weight that ranges 200-500 kg.

e3 Weight shown is in 1 kg steps; only for weight that ranges 500-2200 kg.

F1 Fork 1 relay setpoint 1 is activated.

F2 Fork 2 relay setpoint 2 is activated.

NOTE: Smaller loads are weighed with higher accuracy. Example: If an original load with **e2** range selected is removed, and a smaller load qualified for **e1** range, the **e2** range will remain selected until the forks are zeroed.

Right of Display

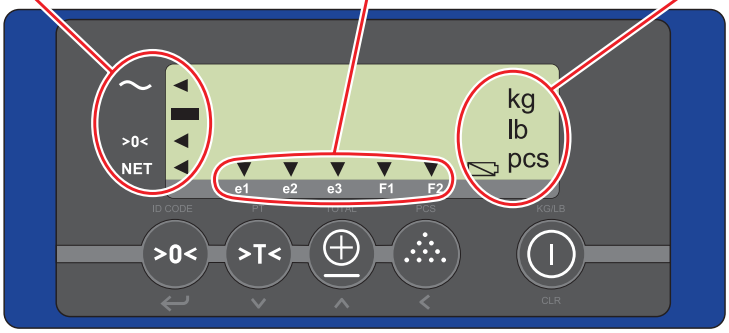
When the following appears:

kg Weight shown is in kilograms

lb Weight shown is in pounds

pcs Amount displayed is the number of pieces on the scale

Low battery indicator



Display Button	Short Button Press	3 Second Button Press	Entry Mode
ID CODE >0< ↵	>0< Zero Setting - Manually zeros the display	ID CODE Code Entry - A 5-digit code useful for a weighing system connected to peripheral equipment for later processing.	↵ Enter (accept value)
PT >T< ˅	>T< Automatic Tare - Allows the tare weights to be reset to zero automatically. Added and subtracted weights can be determined.	PT Manual Tare - An entered tare weight at any moment.	˅ Decrease the value of the digit flashing
TOTAL ⊕ ^	⊕ Weighed load is added to total weight. If printer is installed, a printout is made.	TOTAL Check subtotal and print total.	^ Increase the value of the digit flashing
PCS ⁘ <	⁘ Sampling a piece weight - Determined an unknown piece weight by sampling a certain number of pieces. Standard sampling amount is 10 pieces.	PCS Enter a piece weight - The last used piece weight or an entered value.	< Shift to the next digit on the left
KG/LB ⏻ CLR	⏻ On/Off	KG/LB Toggle Units	CLR Clear entry

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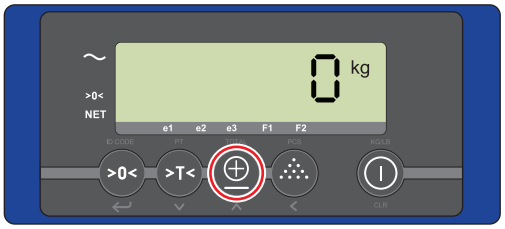
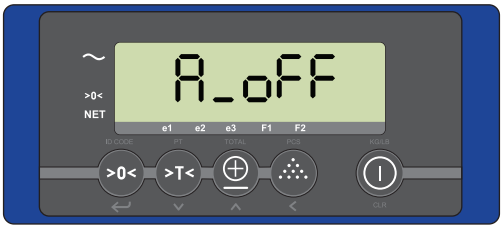
Display Menus



Weigh Mode

Options:
Net/Tare/Gross (Auto/Manual Tare)
Add weight/Subtotal weight/Total weight
Piece weight
Toggle units
Manual zero
On/off



User Settings

Auto shut-off time
Light intensity
Deactivate/Activate Com Port 1
Deactivate/Activate Com Port 2
Alibi Memory

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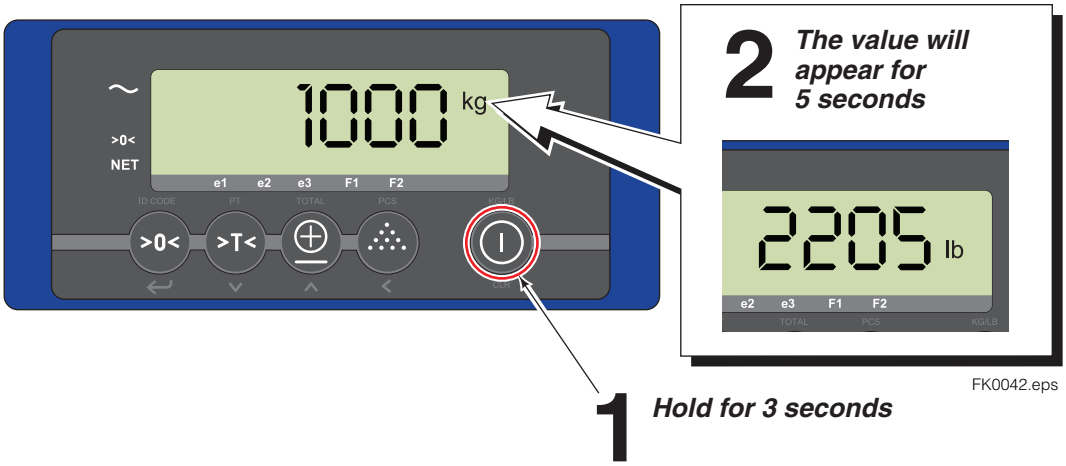
Select Weight Type



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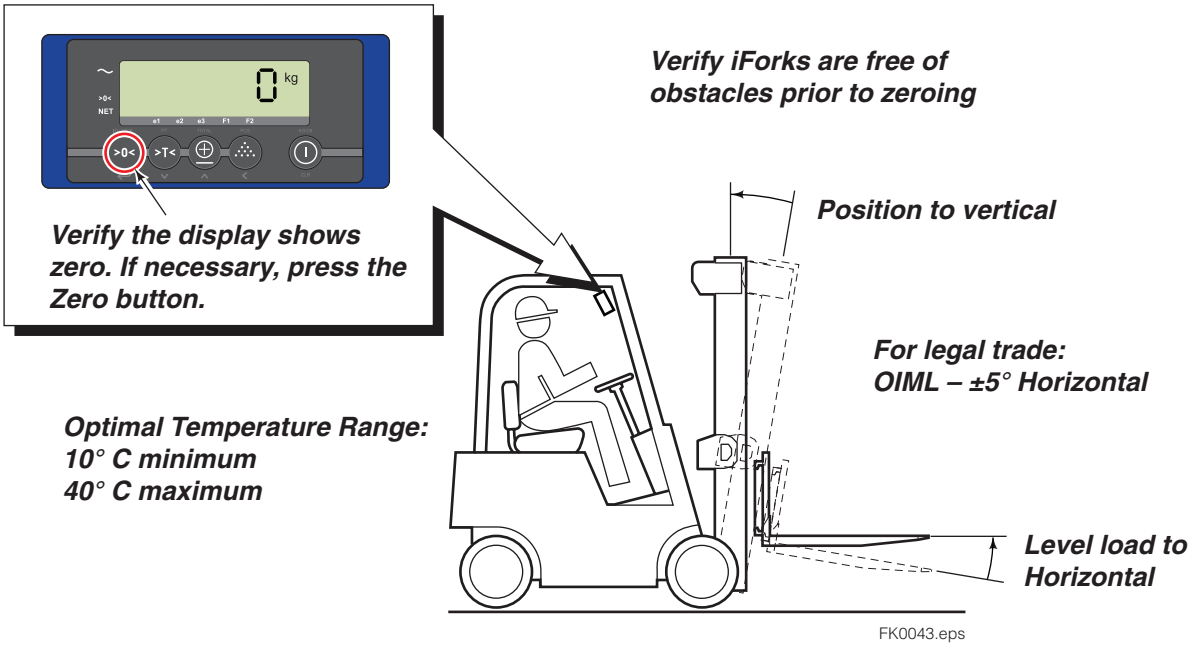
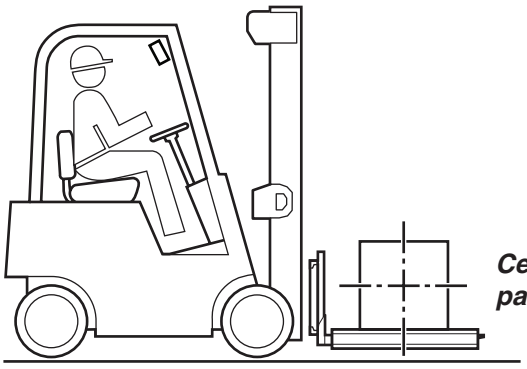
FK0085.eps

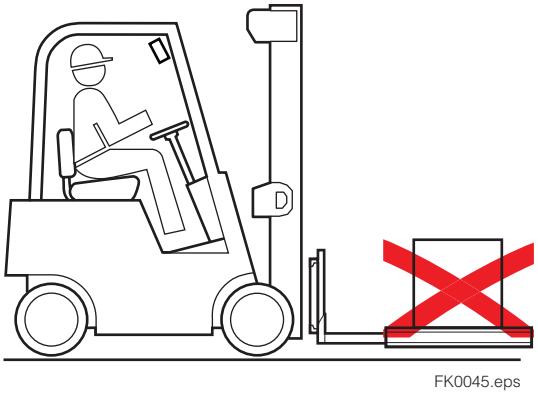
Display Error Message	Meaning	Out of error mode
Err01	Load cell signal is unstable	Automatic
Err02	Overload on full scale	Automatic after removing weight
Err03	Gross negative. This action is not allowed	Automatic
Err04	Out of zero range	Press any key
Err05	Sampling accuracy too low	Press any key
Err06	Input signal too high	Automatic after correcting input
Err08	Calibration out of range (negative)	Automatic
Err09	Calibration out of range (signal too low)	Automatic
Err10	Calibration count 2nd(3rd) point lower than count 1st(2nd) point	Automatic
Err14	Setpoint value 2 < setpoint value 1. This is not allowed	Automatic
Err97	Legal for trade version: not allowed action	Contact Cascade
Err98	Calibration point must be higher than previous one	Automatic
Err99	Action only allowed in startup units	Automatic
ErrF1	Problem with fork 1 (no communication)	Restart indicator. Restart forks & indicator
ErrF2	Problem with fork 2 (no communication)	Restart indicator. Restart forks & indicator
-----	Load cell signal negative	Lift up the forks from the ground
L - _	Forks are out of level (only legal for trade version)	Put the forks into horizontal position
ErrCS	Problem with correction sensor	Contact the Cascade Service department

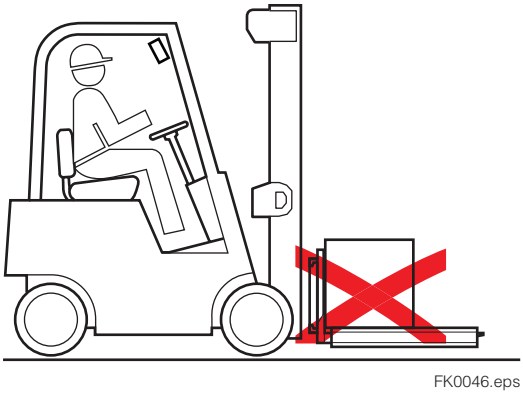
PRIOR TO WEIGHING


Verify iForks are free of obstacles prior to zeroing
Verify the display shows zero. If necessary, press the Zero button.
Position to vertical
For legal trade:
OIML – ±5° Horizontal
Optimal Temperature Range:
10° C minimum
40° C maximum
Level load to Horizontal
FK0043.eps

HANDLING LOADS



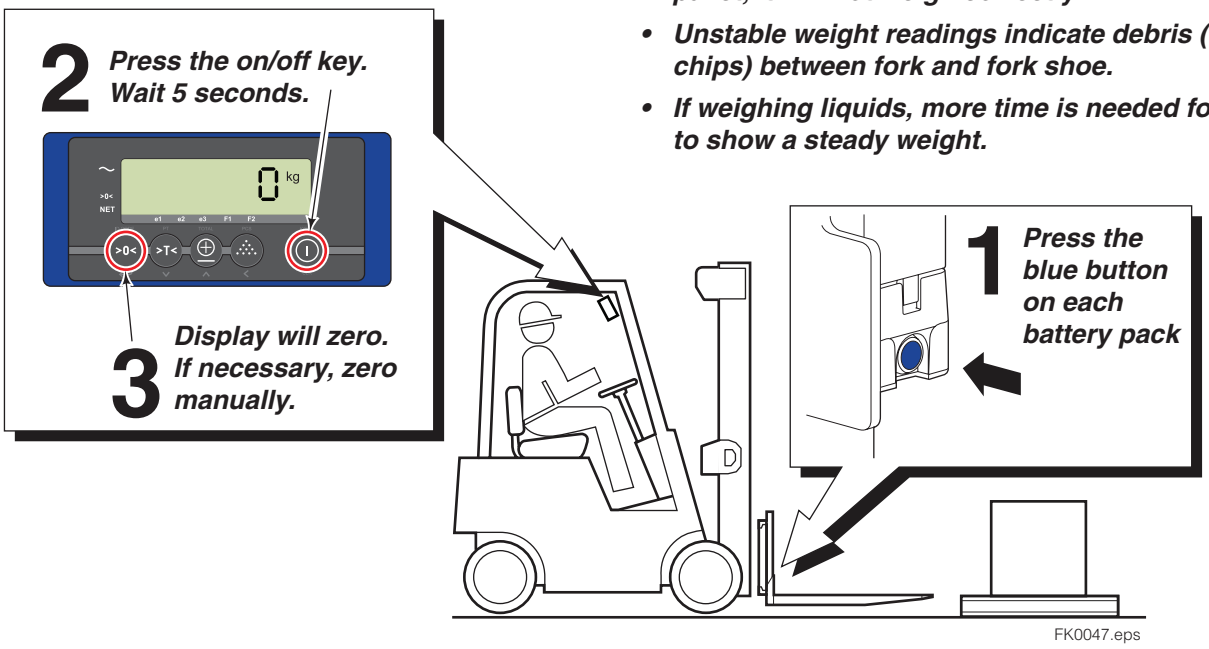




To weigh a load:

IMPORTANT:

- ***At initial daily start up, allow 3-5 minutes for iForks system to warm up before weighing loads.***
- ***If front face or bottom of iForks touches the load or pallet, it will not weigh correctly.***
- ***Unstable weight readings indicate debris (ie. wood chips) between fork and fork shoe.***
- ***If weighing liquids, more time is needed for display to show a steady weight.***



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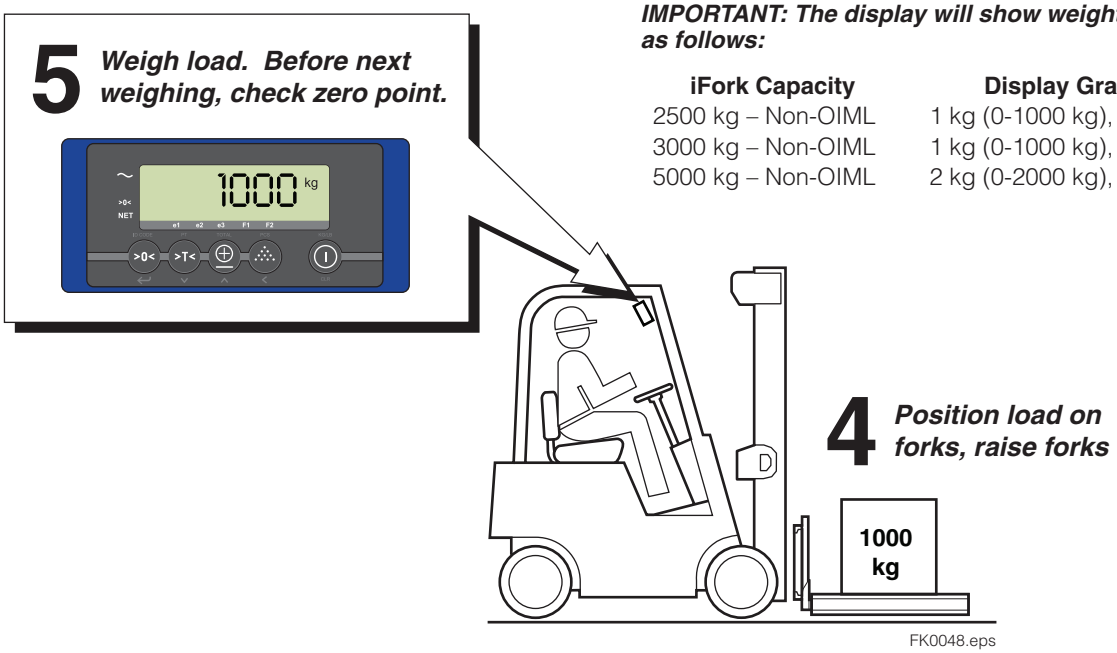
IMPORTANT: The display will show weight in graduations as follows:

iFork Capacity	Display Graduation
2500 kg – Non-OIML	1 kg (0-1000 kg), 2 (>1001 kg)
3000 kg – Non-OIML	1 kg (0-1000 kg), 2 (>1001 kg)
5000 kg – Non-OIML	2 kg (0-2000 kg), 5 (>2001 kg)



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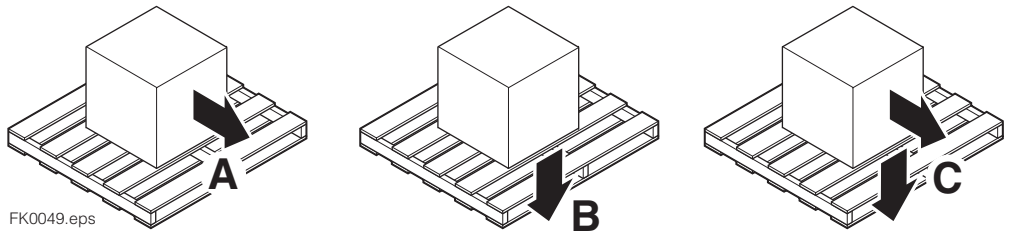
Weighing a Load - Net/Tare/Gross Weight



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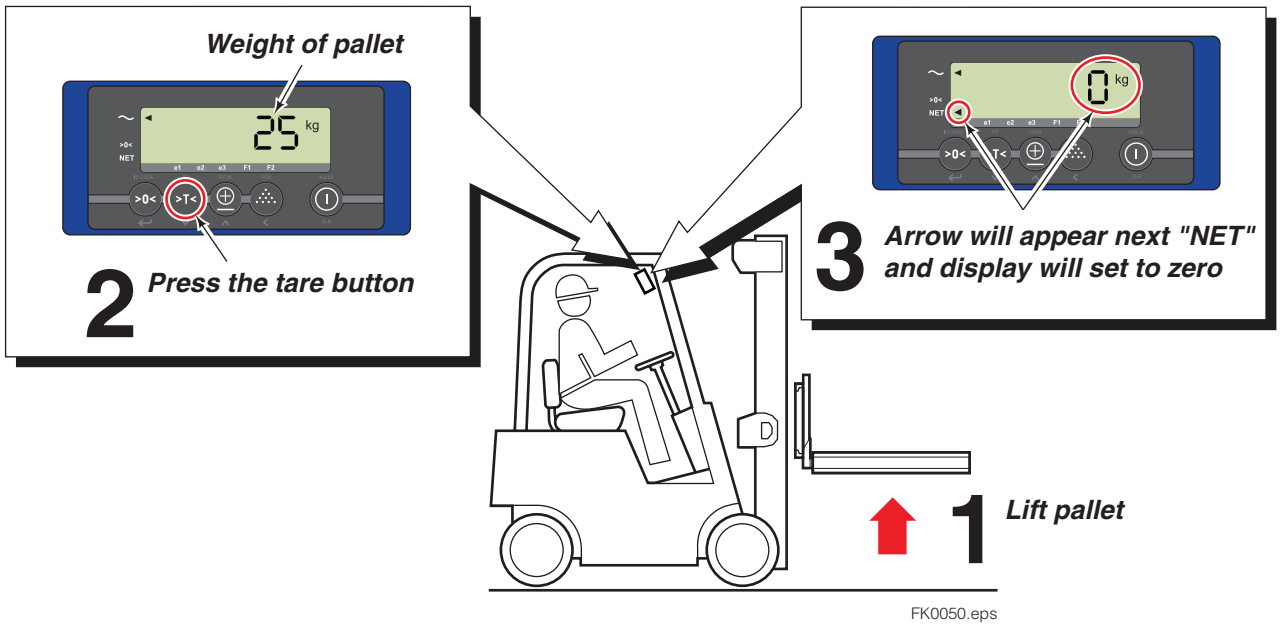
Net (A) + Tare (B) = Gross (C)

NET – The weight of the load to weigh
TARE – The weight of an unladen load that is not included (pallet, bin, etc).
GROSS – The weight of the load and unladen load weights combined.

Net Weighing: Automatic Tare

To weigh a load but disregard part of the load with an **unknown** weight (example: pallet):

NOTE: Display must be in basic weighing mode prior to performing the following steps (press on/off button for 3 seconds).



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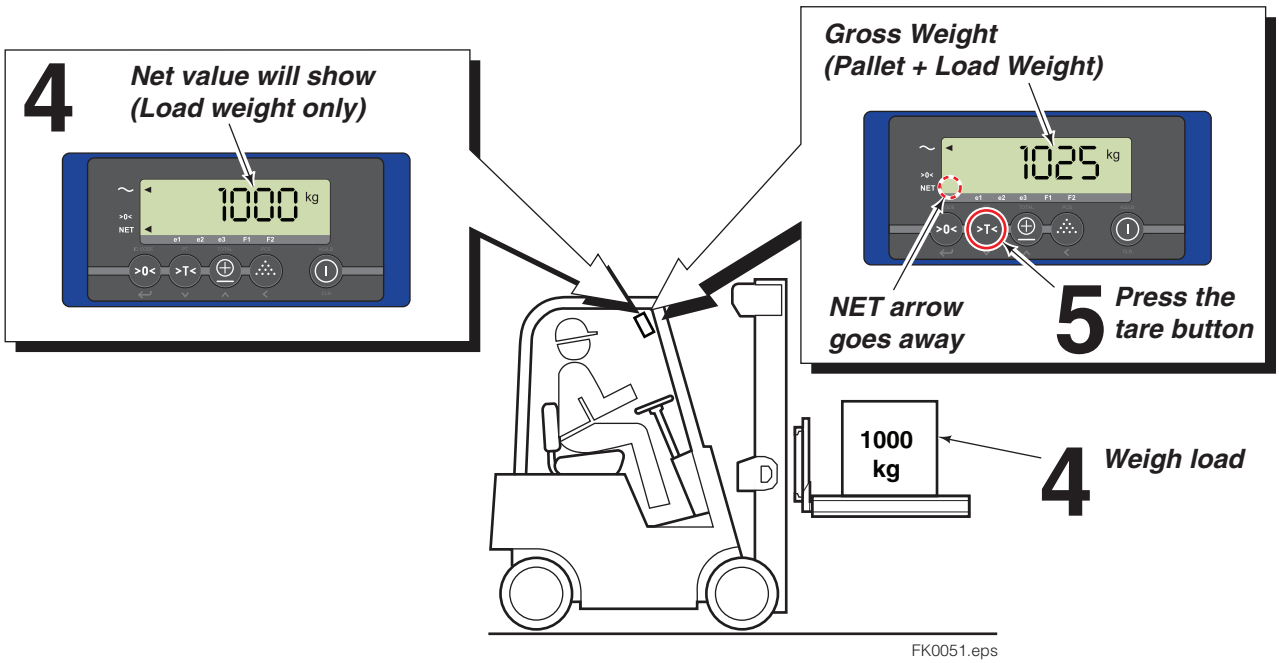
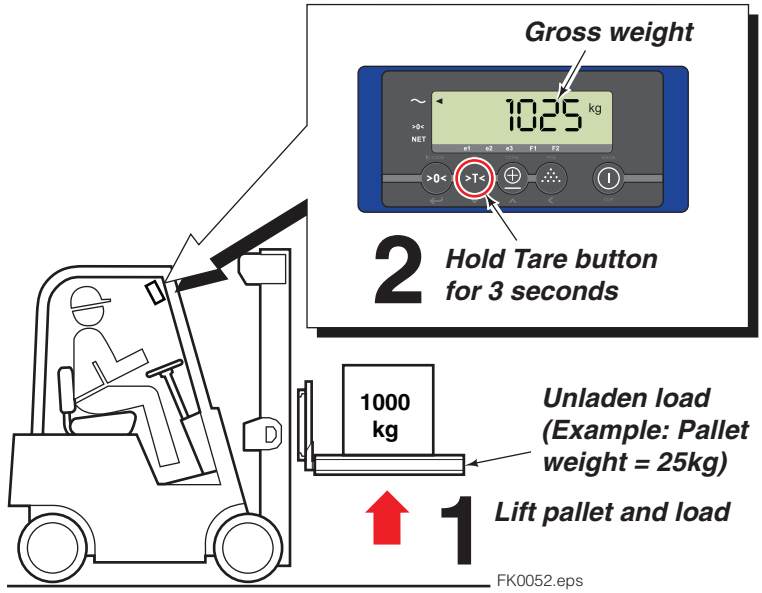


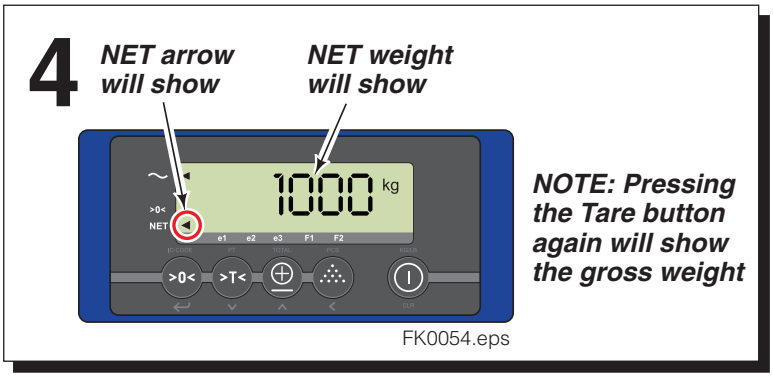
FK0051.eps

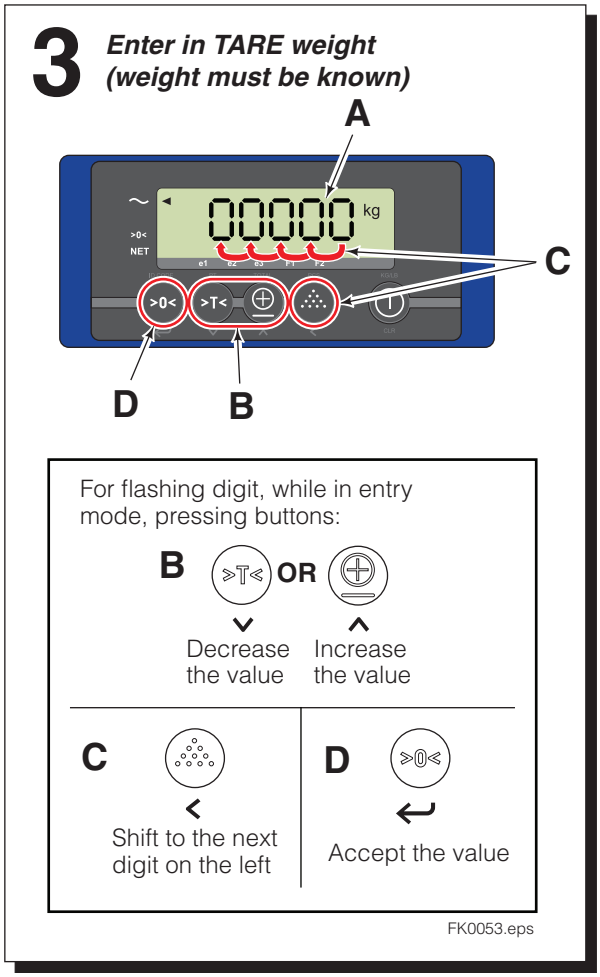
Net Weighing: Manual Tare

To weigh a load but disregard part of the load with a **known** weight (example: pallet):

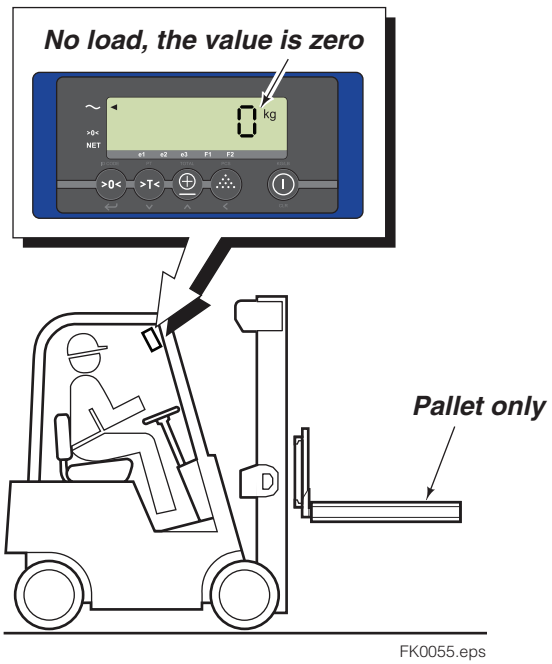
NOTE: Display must be in basic weighing mode prior to performing the following steps (press power button for 3 seconds).



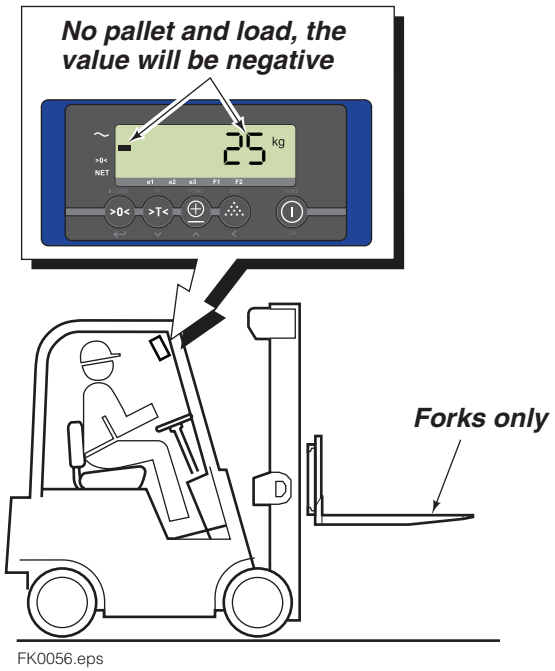




When no load is on the pallet (tare weight entered):

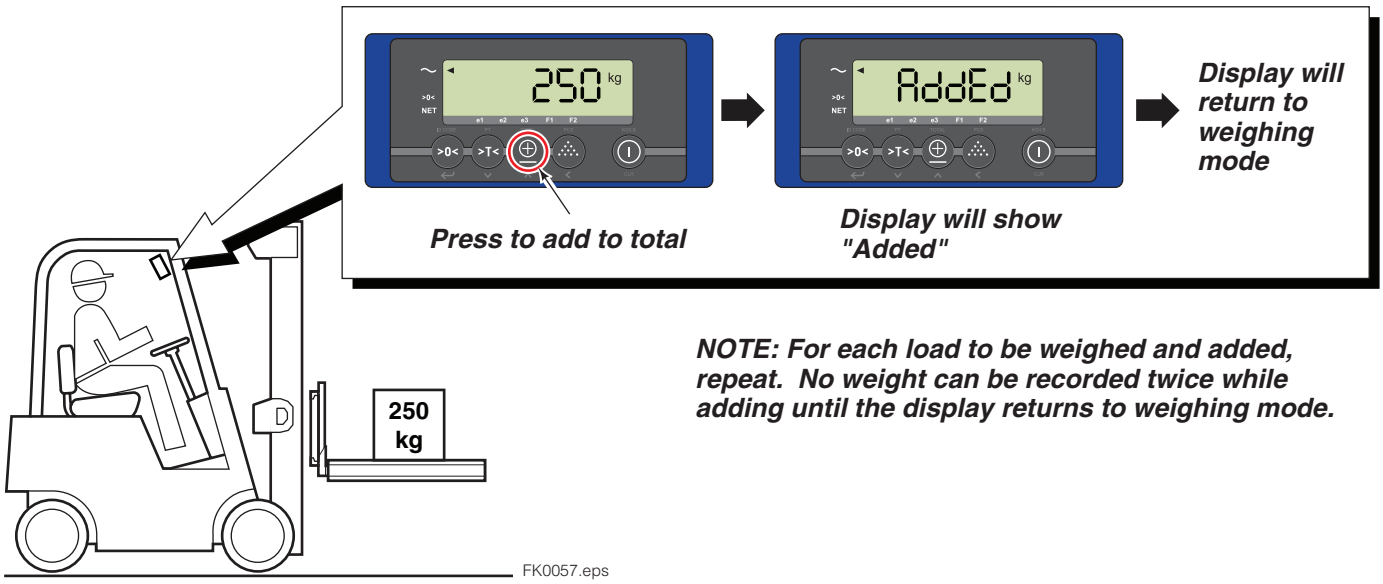


When no load and pallet on forks (tare weight entered):



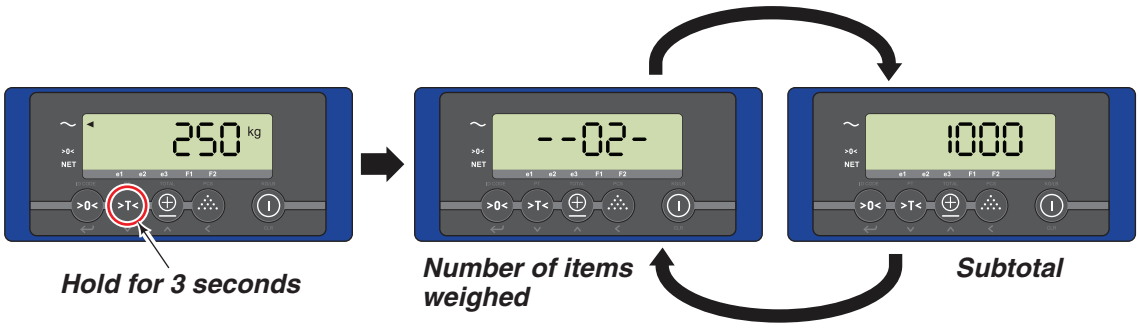
Weighing a Load - Add to the Total & Reset

To add a series of load weights and total:



NOTE: For each load to be weighed and added, repeat. No weight can be recorded twice while adding until the display returns to weighing mode.

During the next 3 seconds, the following flashes:



If one of the buttons is pressed during flashing:

TOTAL

Total is reset

KG/LB

CLR

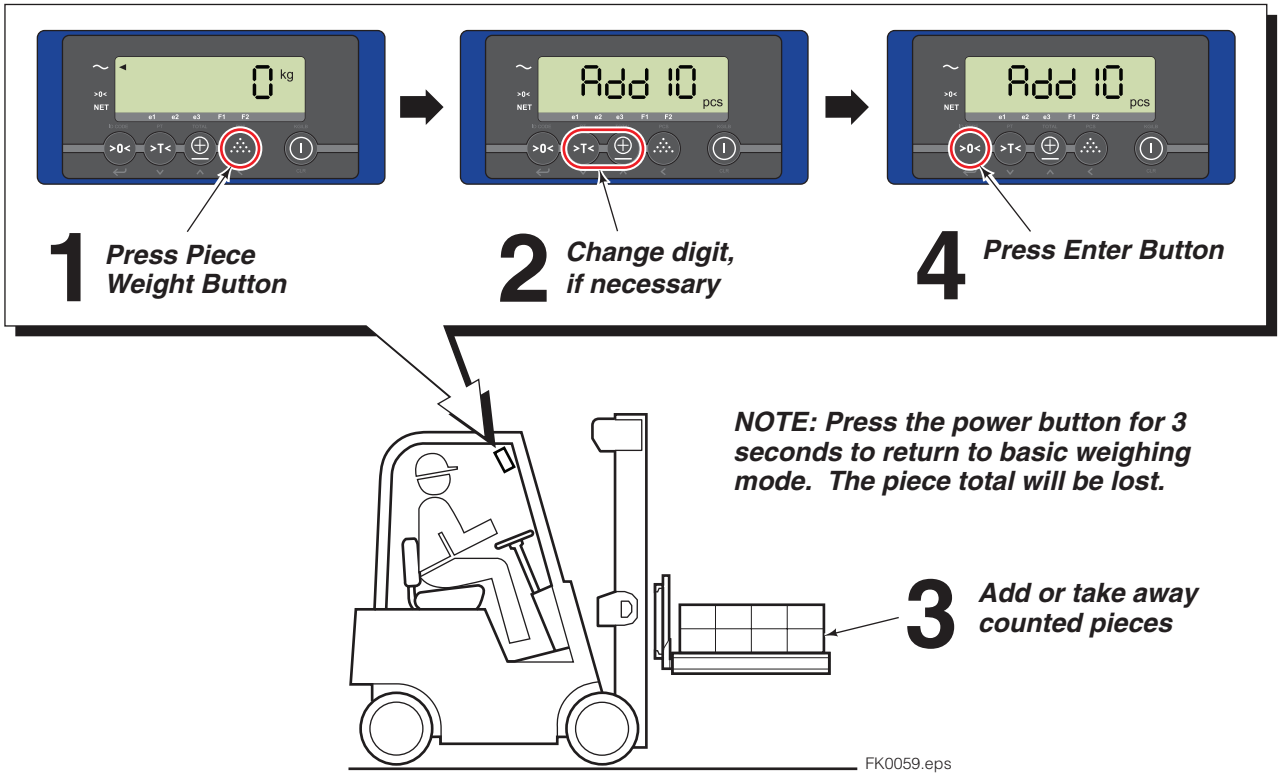
For printer option, total is printed and total is reset

NOTE: If no button is pressed during the flashing, the subtotal stays in memory, and the system returns to the weighing mode after 60 seconds.

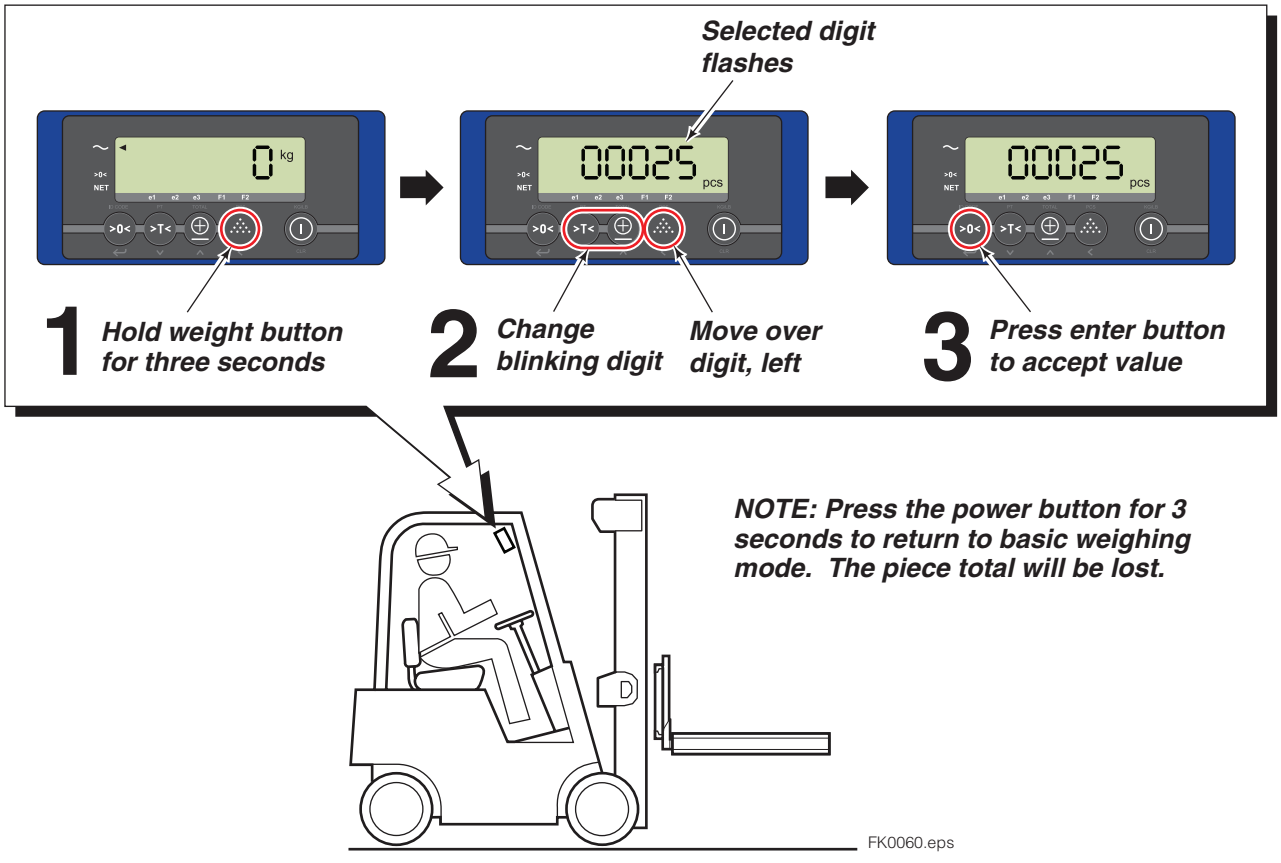
FK0058.eps

Piece Counting:

To determine an unknown weight by sampling a number of pieces. The number of pieces taken from or placed on the iForks determines the accuracy of the sampling. The standard sampling amount is 10 pieces (95 pieces maximum).


0 kg
Add 10 pcs
Add 10 pcs
1 Press Piece Weight Button
2 Change digit, if necessary
4 Press Enter Button
NOTE: Press the power button for 3 seconds to return to basic weighing mode. The piece total will be lost.
3 Add or take away counted pieces
FK0059.eps

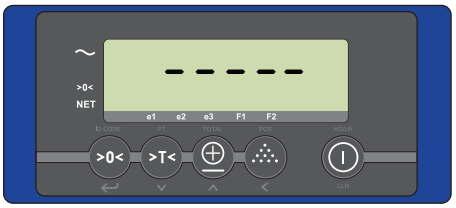
Enter a Piece Weight (known weight):


Selected digit flashes
0 kg
00025 pcs
00025 pcs
1 Hold weight button for three seconds
2 Change blinking digit
Move over digit, left
3 Press enter button to accept value
NOTE: Press the power button for 3 seconds to return to basic weighing mode. The piece total will be lost.
FK0060.eps

AUTO SHUT-OFF

After 2 minutes of no action:

1



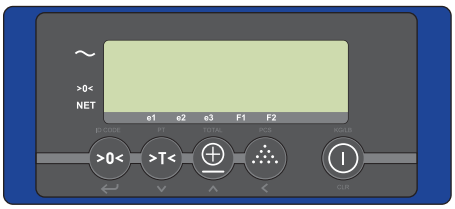
On the indicator: Countdown Screen Shows

Press any key to cancel auto shut-off and return to weighing mode.

2

After 20 seconds, off screen will appear

3



FK0061.eps

Indicator screen will be blank

4

After 2 hours of no weighing, the iForks will turn off.

NOTE: To turn on, refer to "Weighing a Load – Basic", Page 9

FUNCTIONALITY BLUE LED'S	
DURING POWERING ON	ON for 5 sec.
FULL BATTERY	Blink Time Interval
Working Mode	Once every 1.5 sec.
Sleep Mode	Once every 4 sec.
LOW BATTERY	
Working Mode	Twice every 10 sec.
Sleep Mode	Twice every 10 sec.

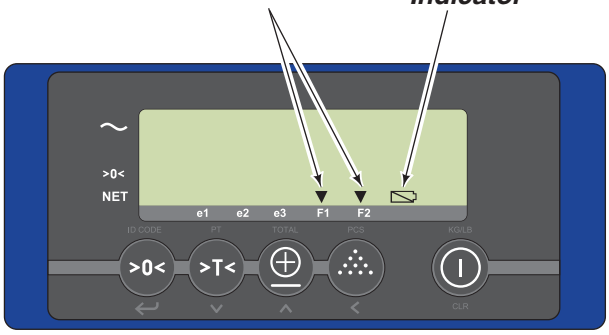
IMPORTANT: For three shift applications, change batteries every morning.

NOTE: Battery life will last up to 80 hours if the system is set at factory settings.

The display will show when there is a low battery on the iforks:

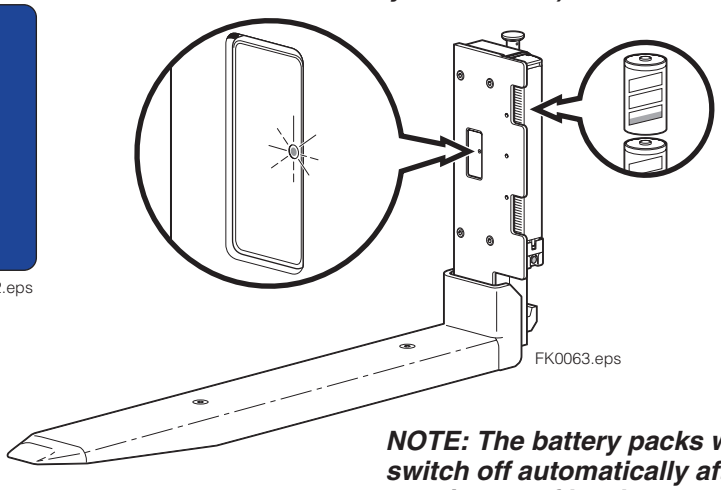
Arrows for fork will blink:
F1 = Fork 1
F2 = Fork 2
F1 & F2 = Fork 1 & Fork 2

Low Battery Indicator



FK0062.eps

Low Battery Indicator:
The blue LED on the related fork will start blinking (2 times every 10 seconds)



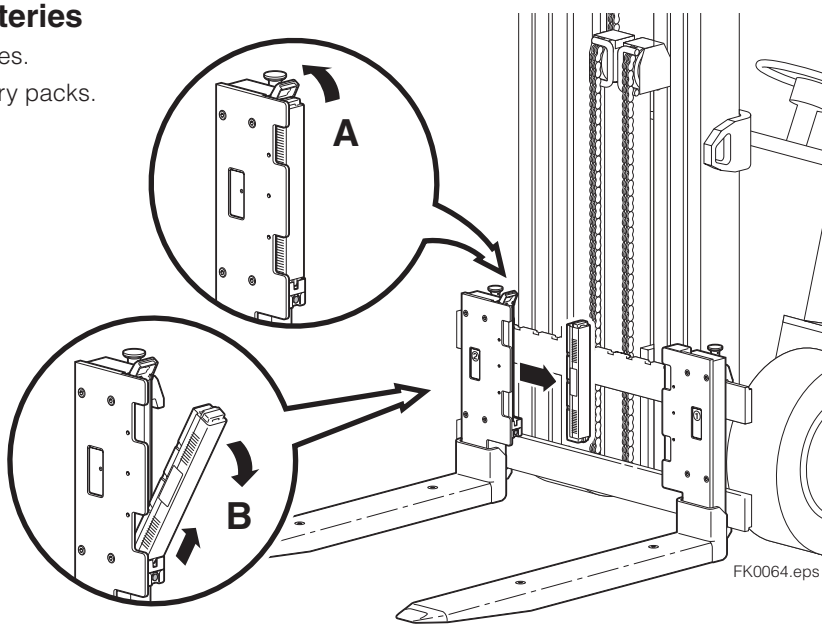
FK0063.eps

NOTE: The battery packs will switch off automatically after 10 minutes of low battery.

To change batteries on iForks, perform the following:

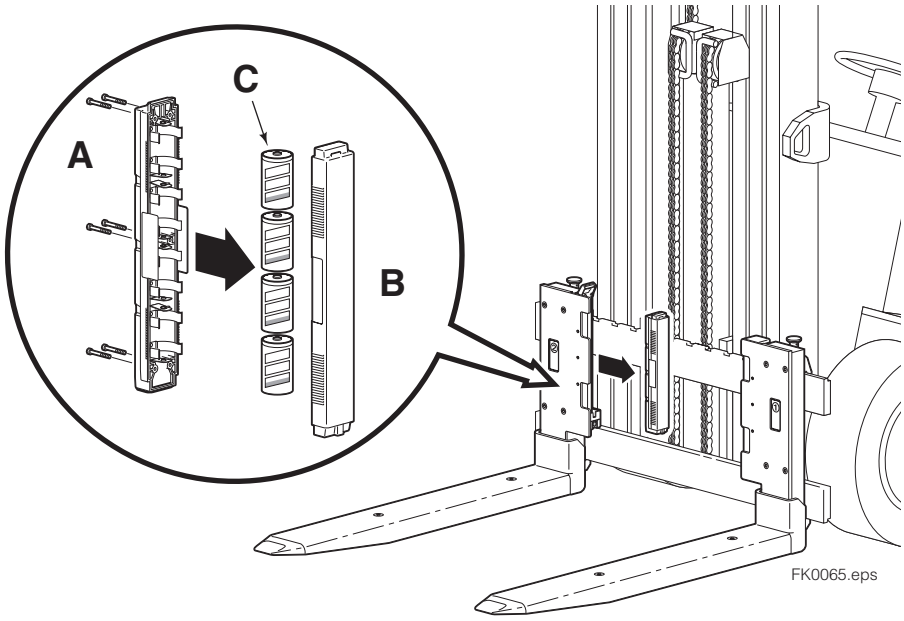
1 Remove batteries

A Unlock batteries.
B Remove battery packs.



2 Remove D-Cells from battery packs

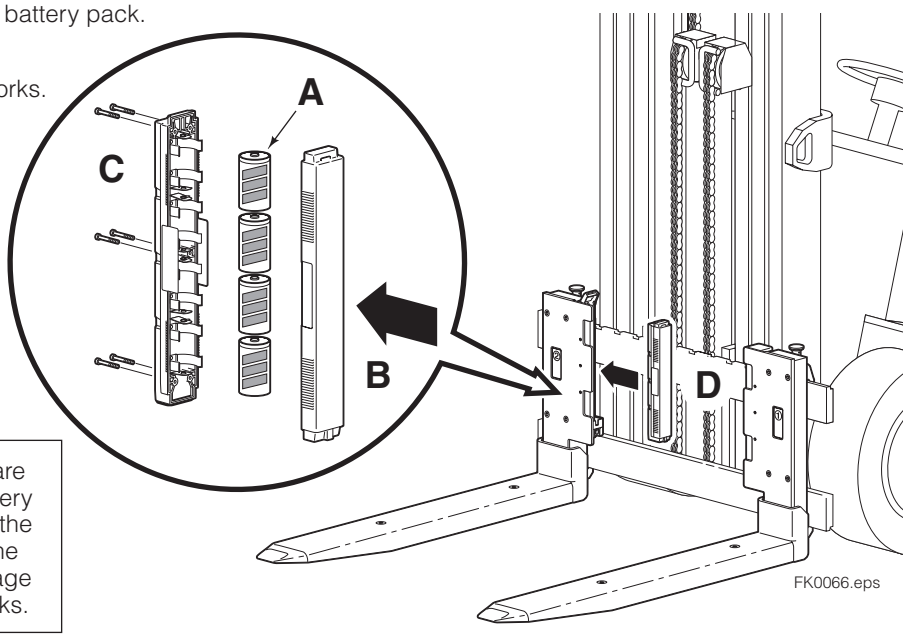
A Remove the capscrews.
B Remove top housing of battery pack.
C Remove batteries.



3 Install battery packs in iForks

A Install four batteries in each battery pack.
B Replace the top housing of the battery pack.
C Install capscrews finger tight.
D Install battery packs into the iForks.

CAUTION: When installing battery packs, place batteries into casing. Shoving or hitting battery into the packs will cause damage to the casing.



FK0066.eps

WARNING: Alkaline batteries are not rechargeable. Alkaline battery packs are not compatible with the charger. Tampering with Alkaline battery packs can cause damage to the charger and battery packs.

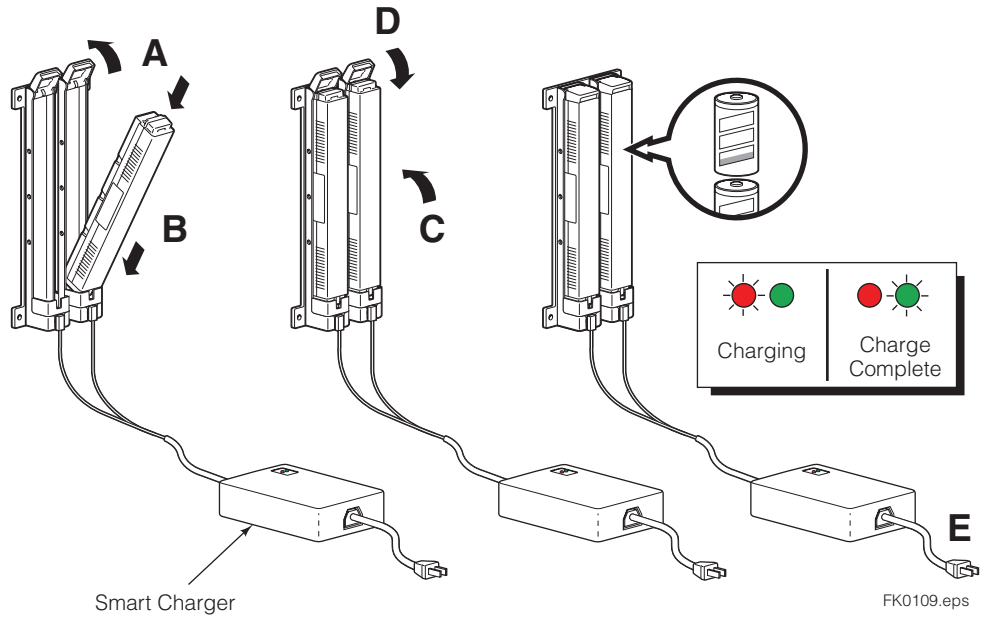
4 Charge battery packs, if equipped with rechargeable batteries

NOTE: Rechargeable batteries are NiMH with a charge capacity of 10,000 mAh.

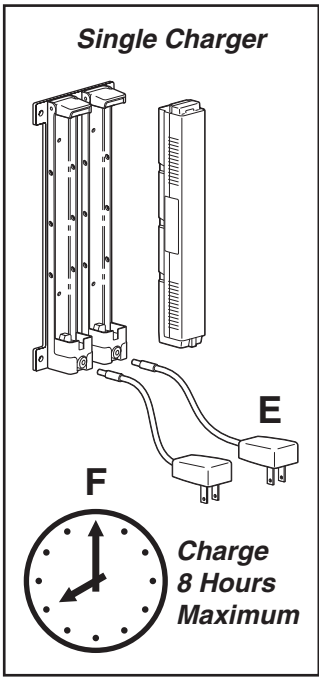
A Lift up locking clips of charger module.
B Position the battery packs into charger.
C Click batteries into charger.
D Push locking clips down.

E Plug the charger(s) into 110V source. The red LED(s) on charger(s) will light.
F If using single chargers, charge for 8 hours. Red LED will stay on after batteries are fully charged.

IMPORTANT: When using single charger, do not charge for more then 8 hours. The charger does not shut off and will damage the charger. The red LEDs will remain illuminated.



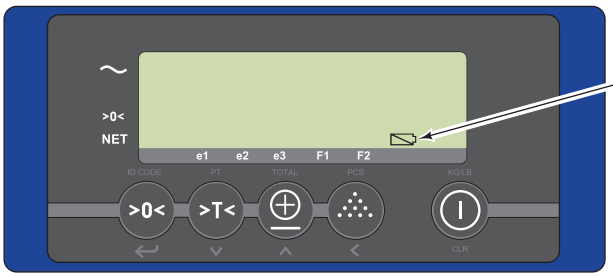
FK0109.eps



FK0110.eps

BATTERIES

Changing Display Batteries (if equipped)



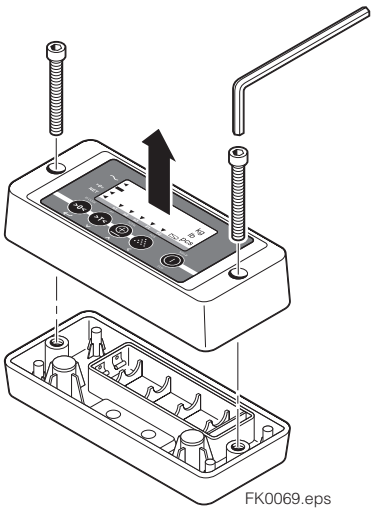
FK0068.eps

Low battery indicator will flash

NOTE: Based on usage, display battery life is variable.

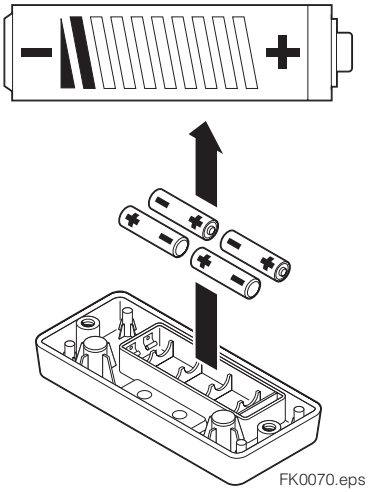
The display is equipped with four AA batteries.

1 Remove capscrews from display lid using M5 allen wrench



FK0069.eps

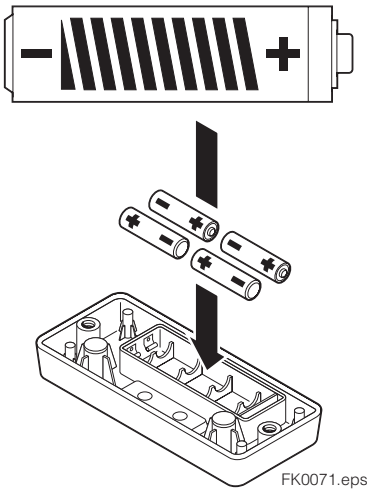
2 Open display and remove old batteries



FK0070.eps

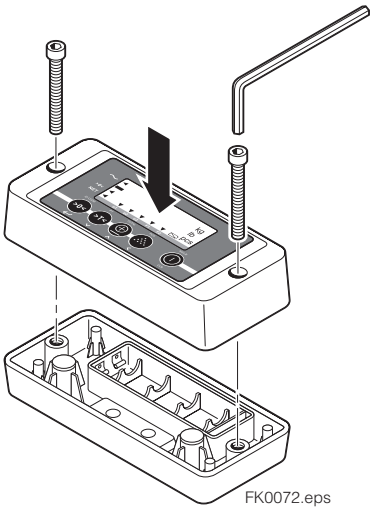
3 Install new batteries.

NOTE: Check the position and polarity of batteries.



FK0071.eps

4 Install display lid and tighten capscrews



FK0072.eps

User Settings

1 Enter user settings

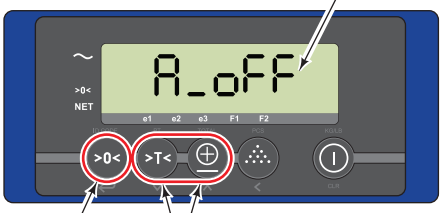
Multiple screens will flash

FK0073.eps

Hold for 10 seconds

2 Choose a menu option

User Settings Menu Mode



Select menu option

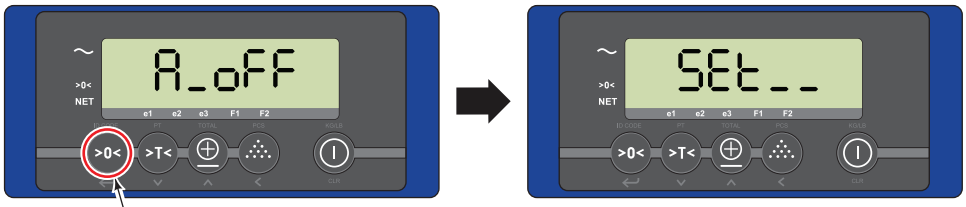
Scroll through menu options:

- *Auto Shut-Off Time (Display)*
- *Light Intensity*
- *Deactivate/Activate Com Port 1 (Bluetooth board)*
- *Deactivate/Activate Com Port 2 (Printer board)*
- *Alibi Memory*

3 Continue to desired submenu (see next page)

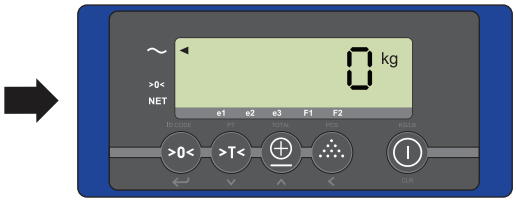
4 Exit menu

Exit & Save:



Hold for 3 seconds

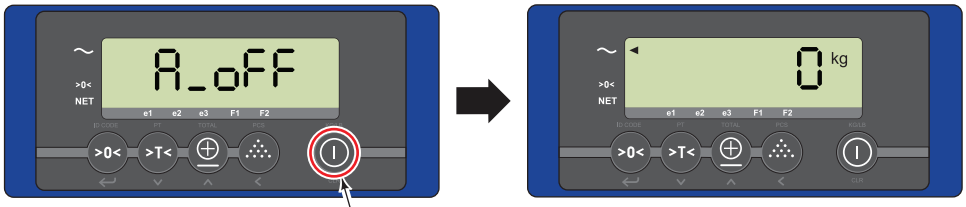
Changes are being saved



Weigh Mode

OR

Exit without Saving:



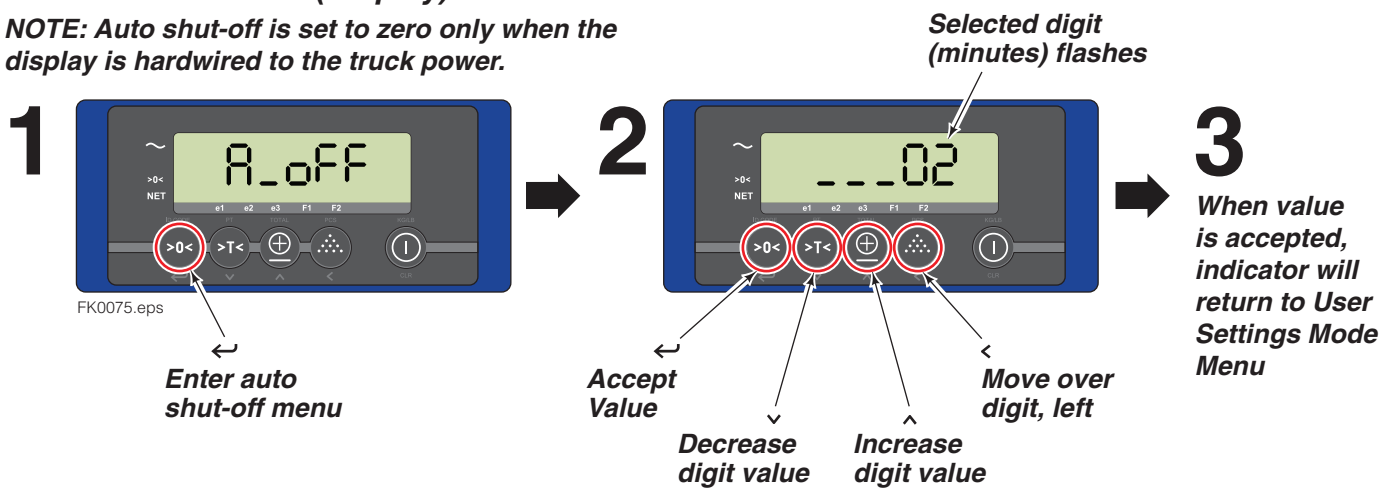
FK0074.eps

Weigh Mode

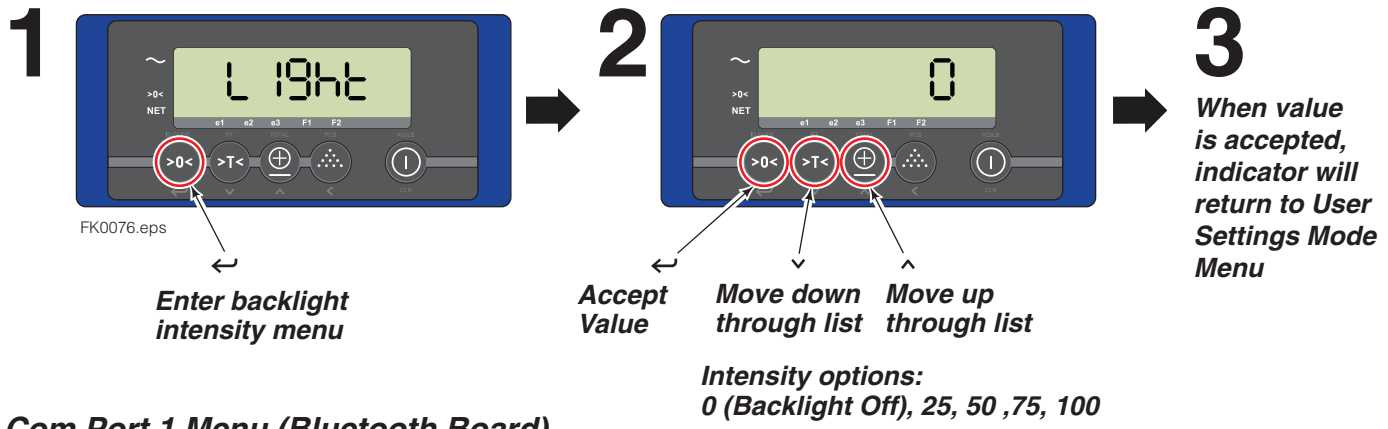
Press CLR button

Auto Shut-Off Menu (Display)

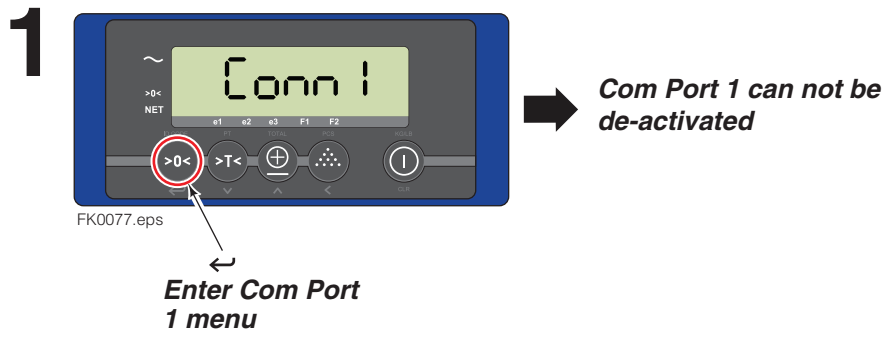
NOTE: Auto shut-off is set to zero only when the display is hardwired to the truck power.



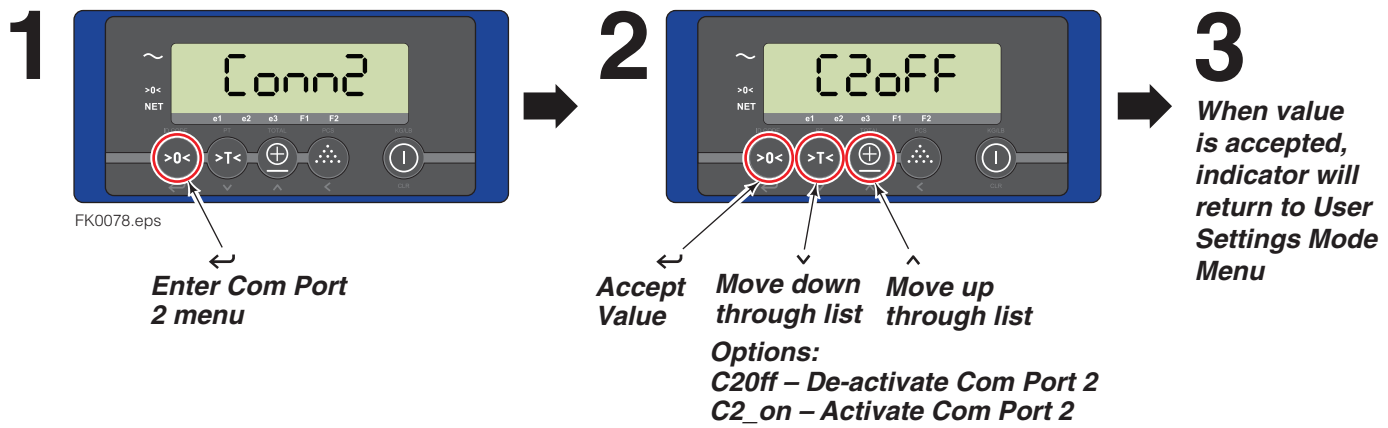
Backlight Intensity Menu



Com Port 1 Menu (Bluetooth Board)

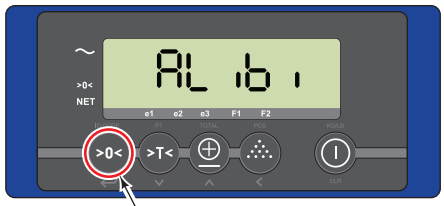


Com Port 2 Menu (Printer Board)



Alibi Memory

This option is only active for forks that require OIML certification. The memory (1 Mb capacity) stores every weight, date, time and an Alibi reference number. This data can be used for dispute. Once memory is full, the oldest data will be overwritten first.

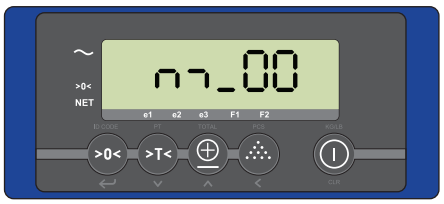


1 ***Enter Alibi Menu***

2 ***Use Entry Mode to look up alibi number information***

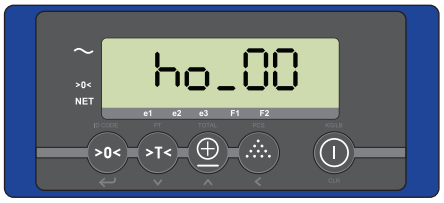
Enter alibi number (based on printout or PC data)

Date Setting: Day

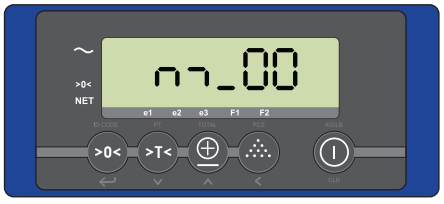


Date Setting: Month

Date Setting: Year



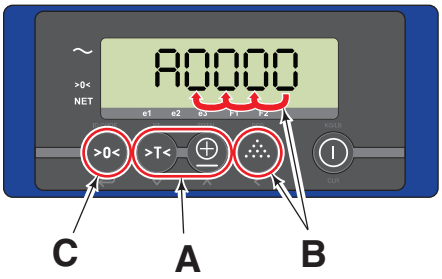
Time Setting: Hour



Time Setting: Minute

Continue to next page

Entry Mode Guide



For flashing digit, while in entry mode, pressing buttons:

A >T< **OR** ⊕

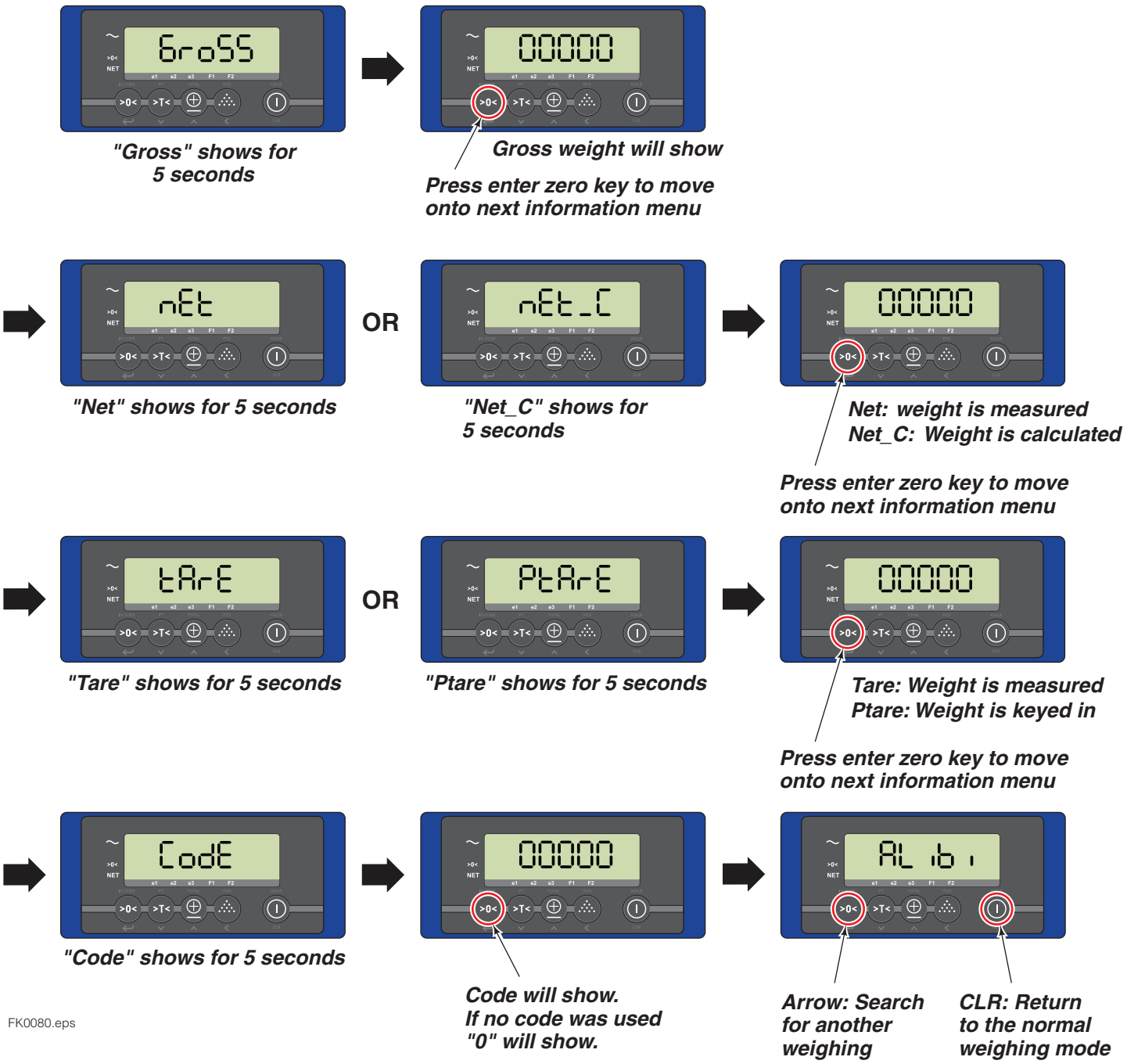
Decrease the Value — Increase the Value

B Shift to the next digit on the left

C >0< Accept the value

FK0079.eps

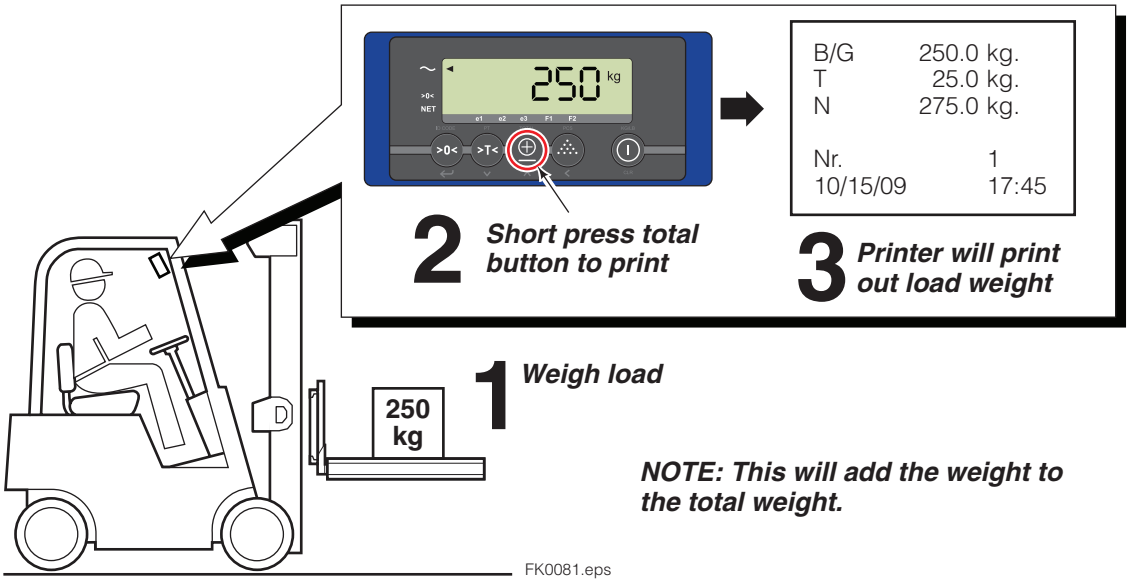
Alibi Memory *(Continued)*



FK0080.eps

NOTE: For troubleshooting, refer to iForks service manual.

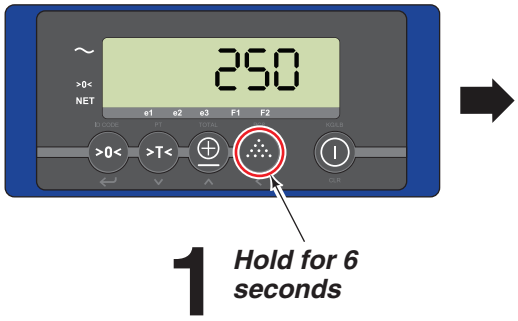
Print Weight



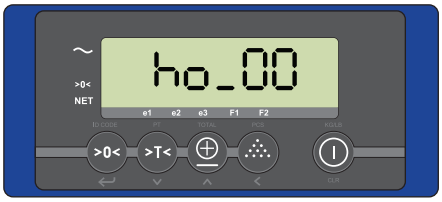
Print Total Weight

Change Time & Date Printout

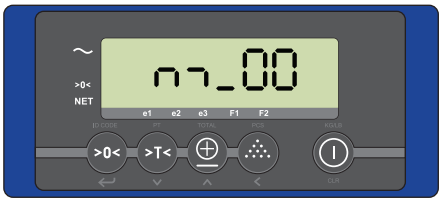
2 ***Change current settings (shown in entry mode guide). To accept current settings, press the enter button.***



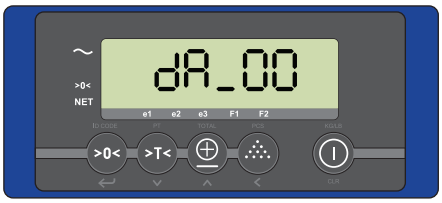
1 ***Hold for 6 seconds***



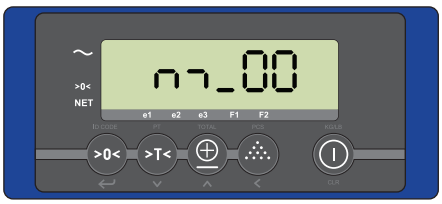
Time Setting: Hour



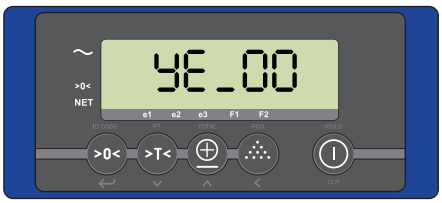
Time Setting: Minute



Date Setting: Day

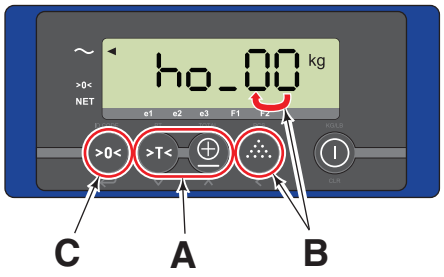


Date Setting: Month



Date Setting: Year

Entry Mode Guide



For flashing digit, while in entry mode, pressing buttons:

A >T< **OR** ⊕

Decrease the value

Increase the value

B Shift to the next digit on the left

C >0< Accept the value

FK0083.eps

IMPORTANT: Only trained and authorized personnel are allowed to service iForks Other maintenance procedures are the sole responsibility of the purchaser.

IMPORTANT: To prevent weighing inaccuracies, the end user is responsible to check accuracy on a regular basis at intervals that best fit their application and requirements. Development of a periodic schedule will prevent faulty readings. Cascade recommends a **minimum** interval of every 12 months or 2000 hours, whichever comes first.

100-Hour

Every time the lift truck is serviced or every 100 hours of truck operation, whichever comes first, complete the following maintenance procedures:

- Check for debris between fork and fork shoe (eg. wood chips).
- Check for pinched wires at bottom of batteries.
- Tighten fork shoe capscrews after initial 100 hours of service. Tighten to a torque of 112 Nm.

2000-Hour

After 2000 hours of truck operation, forks in use shall be inspected at intervals of not more than 12 months (for single shift operations) or whenever any defect or permanent deformation is detected. Severe applications will require more frequent inspection.

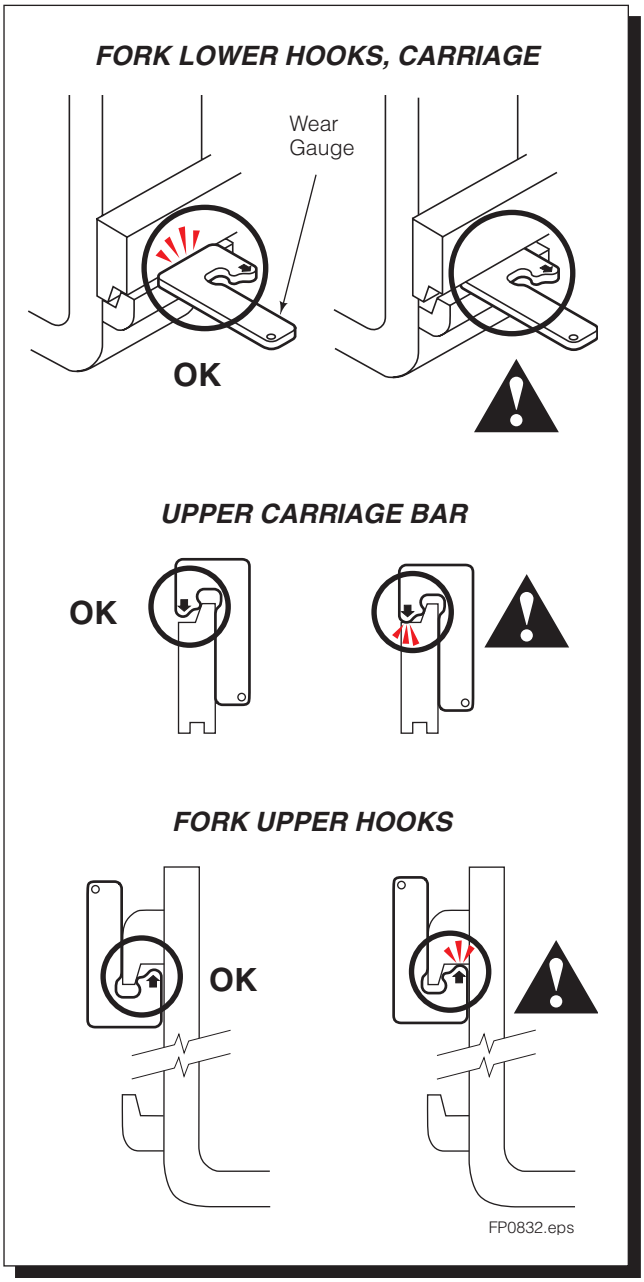
Inspect fork hooks and carriage bar clearance

NOTE: Use go/no-go Wear Gauge Part No. 209560 (Class II) or 209561 (Class III).

A Inspect the fork lower hooks and carriage bar. If the gauge fits between the carriage bar and lower hook, repair or replacement is needed.

B Inspect the upper carriage bar. If the gauge arrow touches the carriage bar, repair or replacement is needed.

C Inspect the fork upper hooks. If the gauge arrow touches the hook, repair or replacement is needed.



2000-Hour (Continued)

Inspect forks

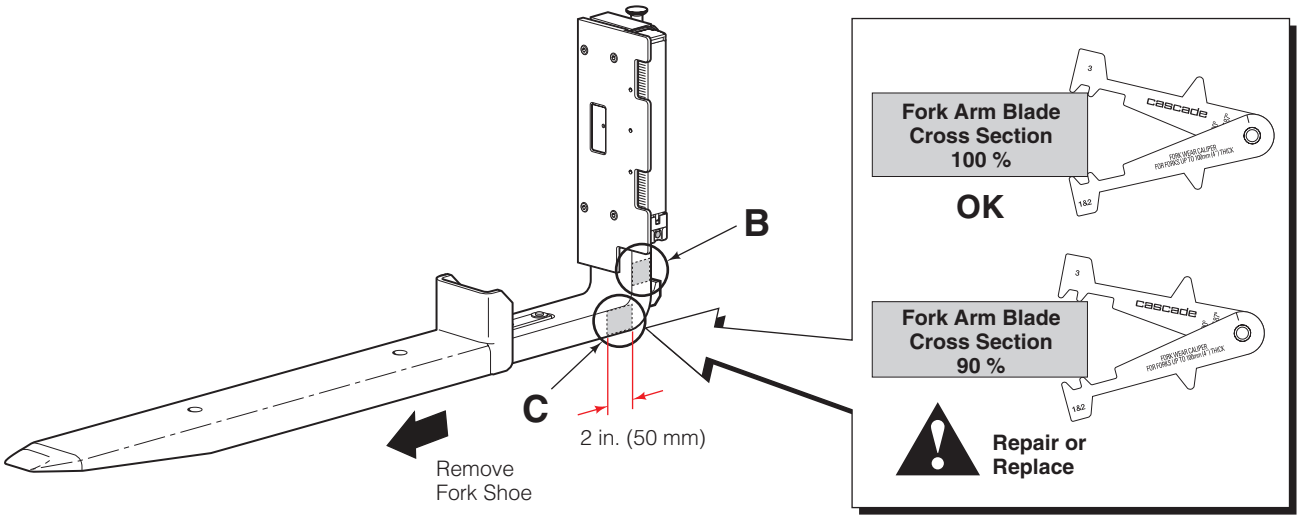
NOTE: Use fork calipers on forks up to and including 100 mm thick. Fork calipers indicate a 10% wear factor if the calipers can pass over the blade cross-section.

A Remove fork shoe from forks. For reassembly, tighten capscrews to a torque of 108 Nm.

B Measure the fork shank thickness with the caliper outer teeth approximately 50 mm above top of blade. Hold this setting for step C.

C Position the caliper inner teeth on the fork arm blade approximately 50 mm out from the face of the shank.

- If the inside teeth of the caliper hit the fork, it has less than 10% wear and requires no replacement.
- If the inside teeth of the caliper pass over the fork freely, the fork must be taken out of service. The fork has 10% wear and 20% reduction in capacity.



FK0088.eps

DECLARATION OF CONFORMITY

Issued by: RAVAS Europe B.V.
Toepadweg 7
5301 KA Zaltbommel
The Netherlands

In accordance with the requirements of:

Low Voltage Directive	2006/95/EC
EMC Directive	2004/108/EC
Committee Directive	2006/42/EC
Council Directive	90/384 EEC

Forks are produced according to international standards:
ISO 2328
ISO 2330
EN 1726-1, paragraph 5.6.5

In respect of: a non-automatic weighing instrument
Manufacturer: RAVAS Europe B.V.
Model: iForks
Description: weighing forks

This declaration of conformity is valid when the above-mentioned instrument is marked with the CE mark. The instrument is verified in the factory and may be used immediately.

We, RAVAS Europe B.V., declare under our sole responsibility that this weighing system is in conformity with the directives and standards mentioned.

H.P.M. van Seumeren
Technical Director

Do you have questions you need answered right now? Call your nearest Cascade Service Department.
Visit us online at www.cascorp.com

En cas de questions urgentes, contacter leservice d'entretien Cascade le plus proche.
Visiter le site Web www.cascorp.com.

Zijn er vragen waarop u direct een antwoord nodig hebt? Neem dan contact op met uwdichtstbijzijnde serviceafdeling van Cascade. Of ga naar www.cascorp.com

Per domande urgenti contattare l'Ufficio Assistenza Cascade più vicino.
Visitate il nostro sito all'indirizzo www.cascorp.com

Haben Sie Fragen, für die Sie sofort eine Antwort benötigen? Wenden Sie sich anIhren nächsten Cascade-Kundendienst.
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¿Tiene alguna consulta que deba ser respondida de inmediato? Llame por teléfonoal servicio técnico de Cascade más cercano. Visítenos en www.cascorp.com

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